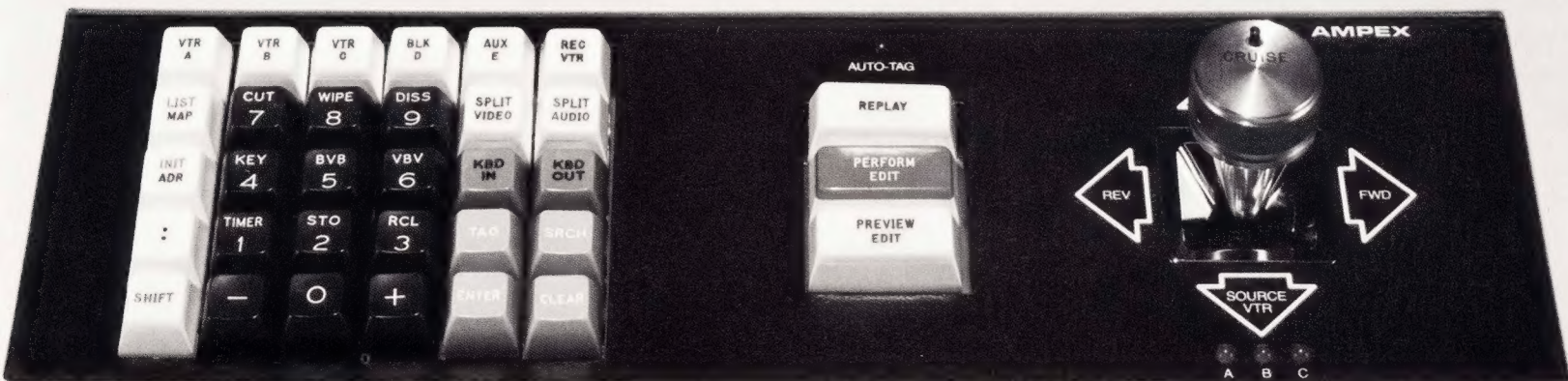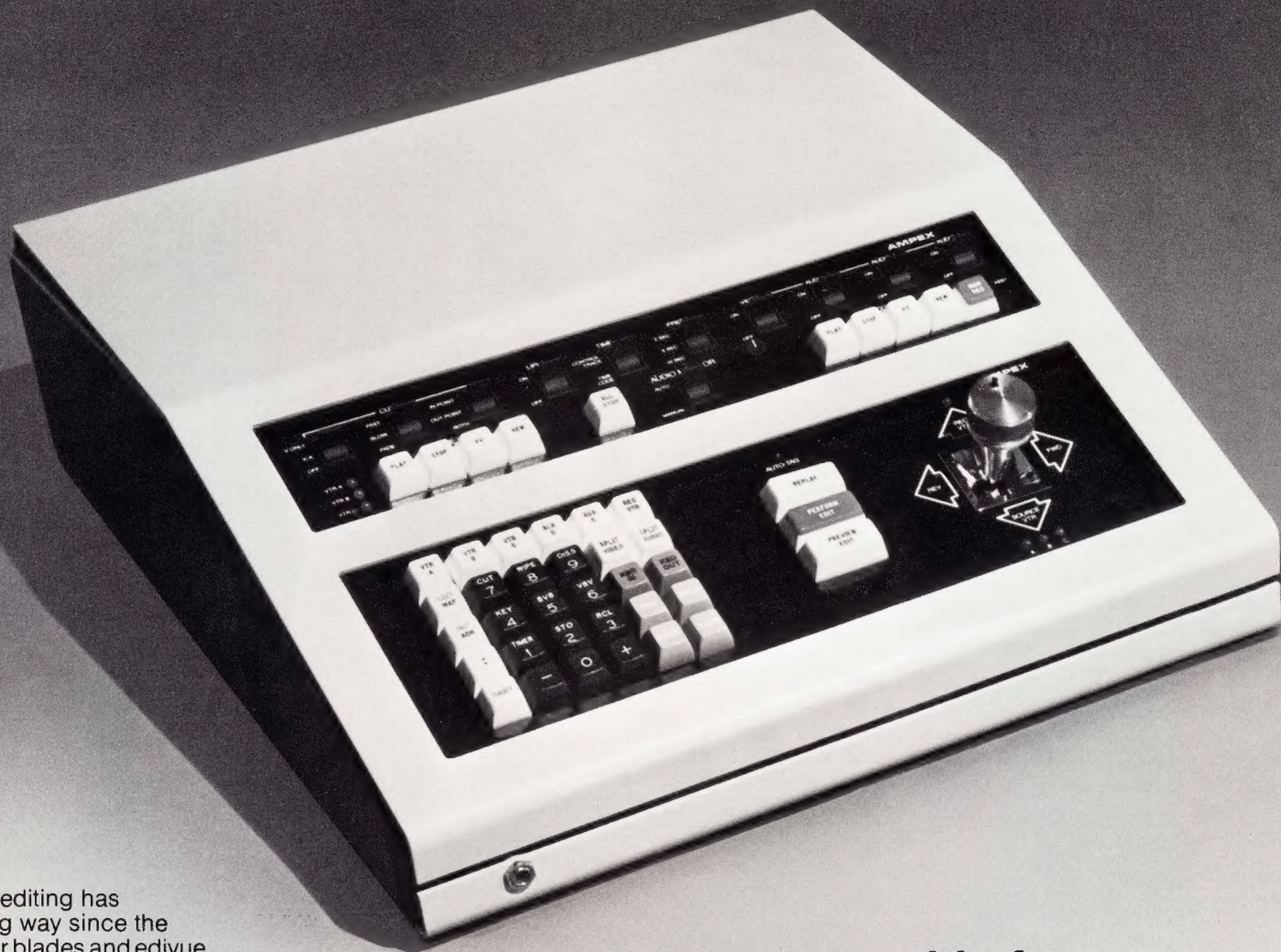# AMPEX

HELICAL PRODUCTION EDITOR

HPE-1C

*FAST, ACCURATE EDITS
AT THE TOUCH OF A BUTTON*

HPE-1C. The medium-sized editor for the Ampex VPR series tape recorders. So advanced, yet so simple to use.

Video tape editing has come a long way since the days of razor blades and edivue. Advanced technology has pushed the state-of-the-art far beyond the realm and imagination of video's earliest pioneers.

Today's video tape editor can select from a vast array of electronic conveniences—frame-accurate editing using time code, A/B roll edits, still frame edits, automatic dialog replacement, animation, split edits, audio pitch control, storage and retrieval . . . all capabilities of the versatile Ampex HPE-1C helical production editor.

No doubt the post-production industry is experiencing a shift to the use of 1-inch helical video tape recorders such as the Ampex VPR series . . . acknowledged world leaders in this exciting new technology. As a supreme compliment to these machines, the HPE-1C fills a void for an editor that's versatile and easy to use.

For the editor and the engineer who appreciate convenience and logical design, the HPE-1C is a true "sitdown" system for either on or off-line post-production applications. Compact. Lightweight (36 lbs.). Modular. All controls are easily accessed. The unit incorporates individual plug-in printed wiring assemblies (PWA's). Upgrading can be as easy as slipping in a new board.

It brings a world of creativity to your fingertips.

The HPE-1C is a multi-faceted microprocessor-based tabletop editing control system. It has the capability of interfacing up to four video or audio machines—three source and one record. The compact keyboard panel puts a variety of functions within easy reach—including a joystick with cruise control for directional and variable speed operation of one or more transports.

Additional features include adjustable pre and postroll and switchable tape time reference to accommodate either SMPTE/EBU time code or control track pulse counting.

Making the actual edit is as simple as pushing two buttons. What's more, the AUTO TAG memory circuitry automatically computes and stores the record VTR out-edit location, which in turn becomes the record VTR in-edit point for the next edit.

The Ampex HPE-1C is sophisticated, responsive, yet so simple to use.

You don't need an engineering degree to use it.

With some systems, even basic edits require an advanced engineering degree. Not so with the HPE-1C. In fact, cuts, variable speed lap dissolves, wipes, and fades are as easy as pushing a few buttons.

The HPE-1C also allows complete split-edit capability, the laying down of video and any combination of three audio tracks at different in-edit points during a single pass. Editing can be referenced either by control track or time code, with the optional time code reader, for precise frame addressing.

Joystick and Cruise Control

This is the heart of the HPE-1C. From here you have complete control over all transport modes. Toggle up to engage the record VTR. Or select a source VTR from the keypad

module and toggle down. Deflecting the joystick either left or right controls transport direction and speed. The greater the angle of deflection, the greater the speed. The joystick is spring-loaded so it snaps back to neutral center and disengages the VTR when released.

Cruise Control is one feature that makes the HPE-1C such a delight to work with. You can scan a scene from one source VTR while shuttling on another. At the same time, a third source VTR may be engaged in tandem with the other two. Cruise Control is actuated by selecting a VTR, then deflecting the joystick to the desired direction and speed. Hit the Cruise button on top of the knob and the engaged VTR will "speed lock" indefinitely until commanded otherwise.

Whether single or multiple-source, the HPE-1C gives you the freedom to experiment, preview, and perform edits with complete confidence.
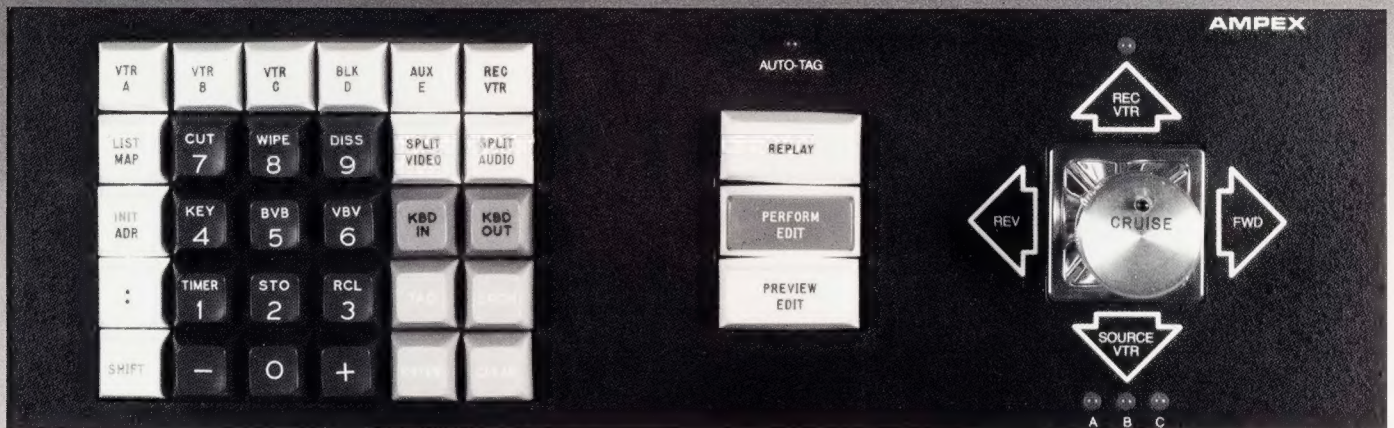
Three powerful editing controls to save you time.

Preview Edit

PREVIEW EDIT automatically transfers edit entrance points into the HPE-1C's memory and commands the transports to commence the preview sequence. The VTRs roll back a pre-determined amount, park, then roll forward, syncing up precisely at the in-edit point. The record VTR then switches into the EE mode allowing a preview of the source material. Transports continue to roll forward either to an amount equal to preroll or to the selected out-edit point, then stop.

Edit points can easily be changed by trimming from the keyboard or by engaging the VTR and moving it via joystick control to the desired position and performing another preview.

Perform Edit

An edit is executed when PREVIEW and PERFORM EDIT are pressed. When an edit is completed, a special feature called AUTO TAG is activated. Especially useful in

sequential editing, AUTO TAG stores the record exit point in memory for use as the in-edit address for the next edit sequence. There is no further need for reprogramming unless the record VTR is repositioned.

Replay

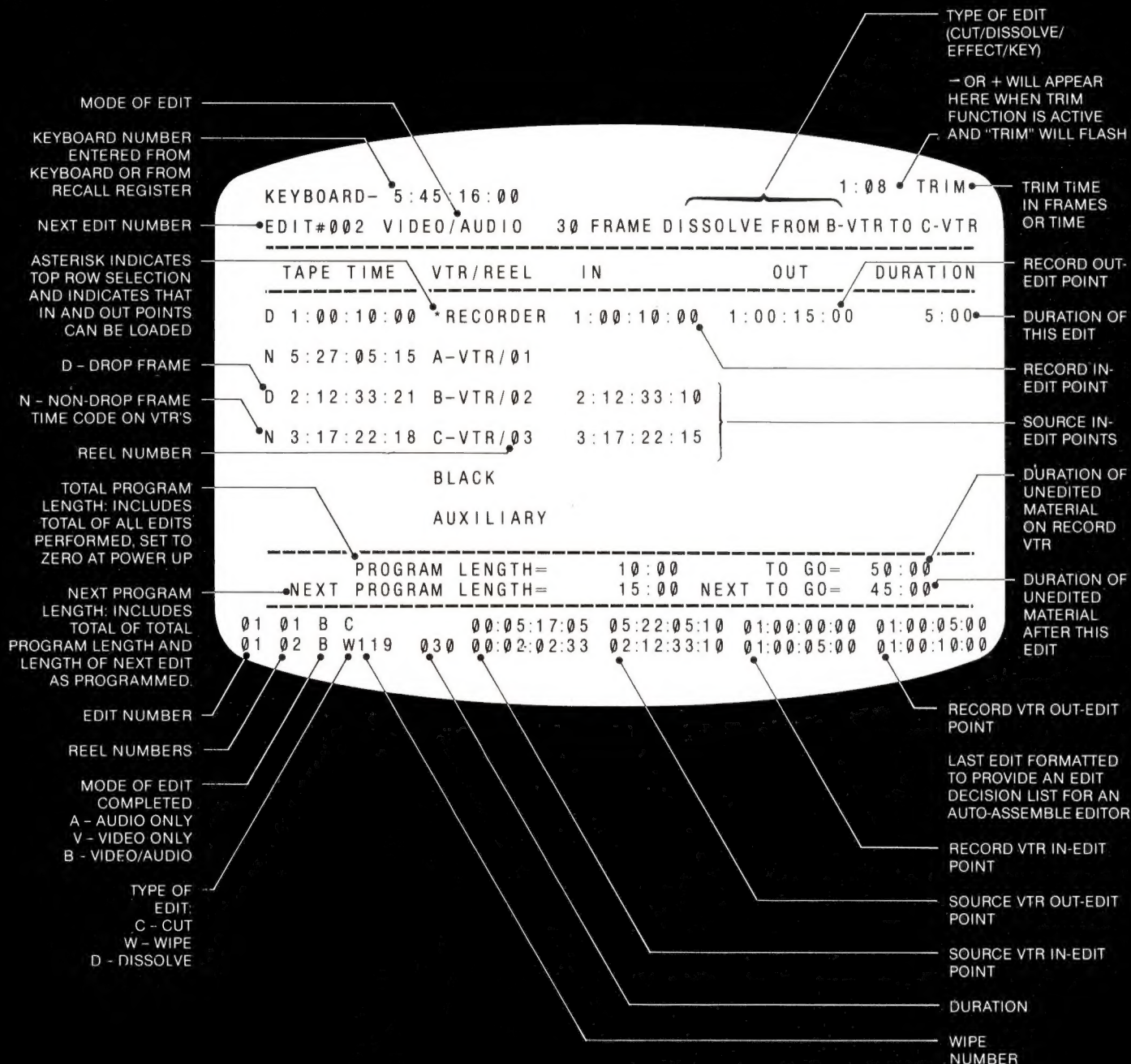Engage REPLAY and the record VTR rolls back and screens the last edit.

Dazzling edits at the touch of a button.

Intrinsic to the HPE-1C design is the keypad cluster. Located on the lower panel, the keypad, with its microprocessor-based electronics, allows for many sophisticated editing maneuvers including Automatic Dialog Replacement (ADR), single machine preview (BVB, VBV), A/B edit, split edit, in and out-point programming, tag, trim, and much more. All in all, the keypad allows the editor to perform a myriad of precise, frame-accurate edits with almost simplistic ease.

Status Display Monitor. The HPE-1C lets you know what's happening at all times.

Whatever you need to know, the HPE-1C can inform you instantaneously. The built-in character generator displays a format of 25 lines, 64 characters per line when used with a customer-furnished CRT monitor. It also acts as a warning system by beeping when undefined commands are accidentally fed in. The display itself is easy to read and simple to understand. A quick glance tells you exactly where you are during an edit.

The Ampex HPE-1C...a compact, yet powerful editing tool that's sure to play a major part in the success of your post-production system for years to come.

TYPE OF EDIT (CUT/DISSOLVE/EFFECT/KEY)

− OR + WILL APPEAR HERE WHEN TRIM FUNCTION IS ACTIVE AND "TRIM" WILL FLASH

MODE OF EDIT

KEYBOARD NUMBER ENTERED FROM KEYBOARD OR FROM RECALL REGISTER

NEXT EDIT NUMBER

ASTERISK INDICATES TOP ROW SELECTION AND INDICATES THAT IN AND OUT POINTS CAN BE LOADED

D – DROP FRAME

N – NON-DROP FRAME TIME CODE ON VTR'S

REEL NUMBER

TOTAL PROGRAM LENGTH: INCLUDES TOTAL OF ALL EDITS PERFORMED, SET TO ZERO AT POWER UP

NEXT PROGRAM LENGTH: INCLUDES TOTAL OF TOTAL PROGRAM LENGTH AND LENGTH OF NEXT EDIT AS PROGRAMMED.

EDIT NUMBER

REEL NUMBERS

MODE OF EDIT COMPLETED
A – AUDIO ONLY
V – VIDEO ONLY
B – VIDEO/AUDIO

TYPE OF EDIT:
C – CUT
W – WIPE
D – DISSOLVE

TRIM TIME IN FRAMES OR TIME

RECORD OUT-EDIT POINT

DURATION OF THIS EDIT

RECORD IN-EDIT POINT

SOURCE IN-EDIT POINTS

DURATION OF UNEDITED MATERIAL ON RECORD VTR

DURATION OF UNEDITED MATERIAL AFTER THIS EDIT

RECORD VTR OUT-EDIT POINT

LAST EDIT FORMATTED TO PROVIDE AN EDIT DECISION LIST FOR AN AUTO-ASSEMBLE EDITOR

RECORD VTR IN-EDIT POINT

SOURCE VTR OUT-EDIT POINT

SOURCE VTR IN-EDIT POINT

DURATION

WIPE NUMBER

Display content:

```
KEYBOARD-  5:45 16:00                              1:08  TRIM
EDIT#002  VIDEO/AUDIO    30 FRAME DISSOLVE FROM B-VTR TO C-VTR
============================================================
   TAPE TIME     VTR/REEL      IN           OUT       DURATION
------------------------------------------------------------
D 1:00:10:00   *RECORDER    1:00:10:00   1:00:15:00     5:00
N 5:27:05:15    A-VTR/01
D 2:12:33:21    B-VTR/02    2:12:33:10
N 3:17:22:18    C-VTR/03    3:17:22:15
                BLACK
                AUXILIARY
============================================================
     PROGRAM LENGTH=      10:00         TO GO=   50:00
  NEXT PROGRAM LENGTH=    15:00    NEXT TO GO=   45:00
============================================================
01  01  B C           00:05:17:05  05:22:05:10  01:00:00:00  01:00:05:00
01  02  B W119  030   00:02:02:33  02:12:33:10  01:00:05:00  01:00:10:00
```

Standard Features

JOYSTICK WITH CRUISE CONTROL

ADJUSTABLE PREROLL SELECT

FULL INSERT EDIT CAPABILITY WITH FRAME-ADJUSTABLE EDIT POINT TRIMMING

SPLIT-EDIT FUNCTION

STILL FRAME AND A/B EDIT CAPABILITY

BUILT-IN CHARACTER GENERATOR FOR CONTINUOUS SYSTEM STATUS DISPLAY (WITH USER-SUPPLIED CRT MONITOR)
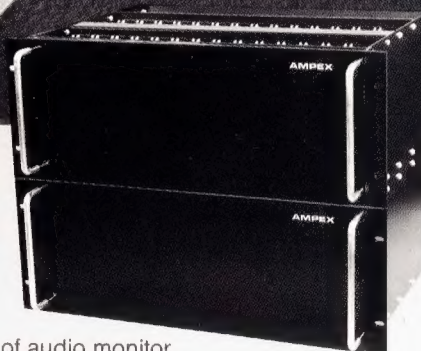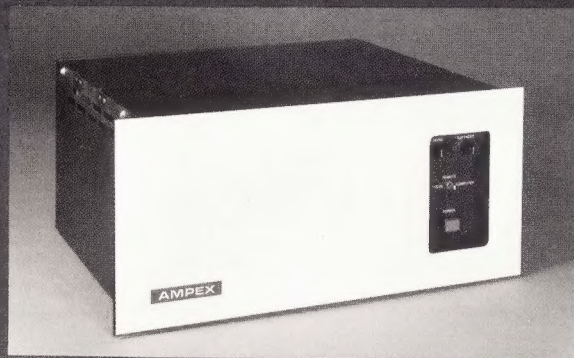
Options and Accessories

ANIMATION REMOTE CONTROL—separate control panel to perform animation edit. 1 to 10 frames can be recorded with source video supplies from a camera or any still frame source.

AUDIO PITCH CONTROL (LIPLOCK)—retains natural pitch of audio monitor signal while joystick is engaging transport at various speeds.

AUDIO/VIDEO SWITCHER—separate rack mounted unit selects video and audio signals from source VTR and from black and auxiliary sources. Used for cuts only.

AUTOMATIC ASSEMBLY—provides automatic assembly of previously recorded decision list.

AUTOMATIC DIALOG REPLACEMENT (ADR)—permits insertion of dialog, sound effects, or other post-sync dubbing. Similar to film "looping".

EDIT DECISION LISTER OUTPUT—provides a universal, serial, RS232 output to drive a customer-furnished hard copy printer, tape punch, or other device. May be used for auto assembly of edited master tapes on computer based editing systems.

PROFESSIONAL SWITCHER/EFFECTS SYSTEM AND CONTROL*—separate rack mounted unit controlled through the keyboard to select special effects such as cuts, dissolves, keys, and wipes. Provides 23 different wipe patterns with hard or soft edge in normal direction or reverse.

SOURCE JOYSTICK CONTROL (VTR B/VTR C)—allows VTR B and/or VTR/C transports to be enabled by joystick variable speed control through interface with keyboard. Requires separate PWA for each machine.

TIME CODE READER SYSTEM—separate rack mounted unit enabling HPE-1C to read and display SMPTE/EBU time code. Basic system reads code from one record and one source VTR. May be expanded to three source VTRs and one record VTR.

*NTSC or PAL only

HPE-1C SPECIFICATIONS

BASIC EDITOR

Dimensions:	17" W x 5¼" H x 18½" D* (432 mm W x 133 mm H x 470 mm D)
Weight:	30 lb. (13.6 kg)
Input Power:	2 amps @ 105-125 volts, 47-63 Hz 1 amp @ 210-250 volts, 47-63 Hz

AMBIENT OPERATING CONDITIONS
Temperature: 0°-45°C
Humidity: 10% to 90% RH (non-condensing)

*Connector panel is on the rear apron. Allow minimum of 9" (229 mm) for connectors and cable dressing.

Machine interfaces are available for VPR-1, VPR-2 and some other 1" and ¾" VTRs.

TIME CODE READER ACCESSORY

Dimensions:	Standard 19" (483 mm) rack mounting 7" (178 mm) high
Input Power:	1 amp @ 105-125 volts, 47-63 Hz 0.5 amp @ 210-250 volts, 47-63 Hz

AUDIO/VIDEO SWITCHER

Dimensions:	Standard 19" (483 mm) rack mounting 3.5" (89 mm) high
Input Power:	0.3 amps @ 105-125 volts, 47-63 Hz 0.2 amps @ 210-250 volts, 47-63 Hz

Unit provides one (1) video and two (2) audio inputs to each of five (5) sources. (VTR A, B, C, Auxiliary and black) for use with multi source system not requiring A-B rolls.

VIDEO
Input Impedance: Bridging (5)
Input Level: 1 Volt P composite (nominal)
Output Impedance: 75 ohm
Output Level: 1 volt P-P composite (nominal)
Differential Gain: 1% at 1 volt P-P, 3.58/4.43 MHz
Differential Phase: 1° at 1 volt P-P, 3.58/4.43 MHz
Response: Flat to 5 MHz ±0.5 dB

AUDIO
Input Impedance: Bridging or 600 ohm switchable balanced (5)
Input Level: 0 dBm (nominal)
Output Impedance: 600 ohm balanced
Output Level: 0 dBm (nominal)
Response: Flat to 10 kHz ±0.5 dB
Total Harmonic Distortion: 0.5% at 10 kHz max.

SWITCHER/EFFECTS   1416310

Dimensions:	Standard 19" (483 mm) rack mounting 7" (178 mm) high
Input Power:	0.5 amps @ 105-125 volts, 47-63 Hz 0.3 amps @ 210-250 volts, 47-63 Hz

VIDEO
Input Impedance: Bridging (5)
Input Level: 1 Volt P-P composite
Output Impedance: 75 ohm
Output Level: 1 Volt P-P composite
Differential Gain: 3% at 1 volt P-P, 3.58/4.43 MHz
Differential Phase: 3° at 1 volt P-P, 3.58/4.43 MHz
Response: Flat to 5 MHz ±1 dB

AUDIO
Input Impedance: Bridging or 600 ohm switchable balanced (5)
Input Level: 0 dBm (nominal)
Output Impedance: 600 ohm balanced
Output Level: 9 dBm (nominal)

Response: Flat to 10 kHz ±1.0 dB
Total Harmonic Distortion: 1.0% at 10 kHz max.
Drive Inputs Required:
Horizontal Drive: 4 Volt P-P, 75 ohm
Vertical Drive: 4 Volt P-P 75 ohm
Burst Flag: 4 Volt P-P, 75 ohm
Composite Blanking: 4 Volt P-P, 75 ohm

PROFESSIONAL SWITCHER/EFFECTS   1430700

Dimensions:	Standard 19" (483 mm) rack mounting. 17" (432 mm) without rack-mount brackets. Height: 8¾" (222 mm) Depth: 15½" (394 mm) Weight: 36 lbs (16.3 kg)
Input Power:	3 amps @ 95-125 volts, 47-63 Hz 1.5 amps @ 210-250 volts, 47-63 Hz

VIDEO
Frequency Response: ±0.2 dB to 6 MHz
±0.5 dB, 6 MHz to 9 MHz
K Factor (2T Pulse): 1% max
Crosstalk: 60 dB @ 3.58 MHz, 57 dB @ 4.43 MHz, all inputs driven synchronously
Signal-to-Noise: 60 dB wideband
Return Loss (input): −38 dB to 5 MHz
Differential Gain and Phase: Less than 1% and 1°
Chrominance/Luminance Delay: <±10 ns
Differential Path Delay: ±1° max
Line/Field Tilt: Less than 1%
Chrominance Phase Shift (during mix): ≤2°p-p
Video Inputs: 1.0V nom, Hi-Z looped BNC
Timing Inputs: Comp Sync: 4.0 V p-p nom looping
Comp Blanking: 4.0 V p-p nom looping
Video Outputs: 75 ohms, unity gain

AUDIO
Input Z: 600/10K switchable, balanced
Input Level Maximum: +20 dBm
Input CMRR: ≥50 dB @ 1 kHz
Frequency Response: 20-20 kHz, ±0.5 dB (ref. 1 kHz)
THD: 20-20 kHz, less than 0.5% (at +8, unweighted)
Signal-to-Noise: 82 dB (ref. +20) (unweighted)
Crosstalk: 70 dB 20-20 kHz (ref. +8 to all other inputs)
Output Level: +8 dBm nom, +20 dBm max
Output Z: Less than 30 ohms, balanced, short proof

Both units provide one (1) video and two (2) audio inputs for each of five (5) sources. (VTR) A, B, C, Auxiliary and black).

Provide necessary connections for the time base correctors (not included) required for proper signal timing.

The Cut mode provides vertical-interval switching from one source to a second source.

The Dissolve mode provides dissolves between two sources with a programmable duration of up to 255 frames.

The Wipe mode provides 23 wipes of patterns from one source to another with a programmable duration of up to 255 frames. They may be programmed for either hard or soft edges and all effects are reversible.

The Key mode provides a fade-up, a fade-down or both of a keyed foreground into a background. The background may be faded from or to black. The fade durations are programmable for up to 255 frames and start of the keypad signal may be delayed for up to 255 frames from the start of the edit.

During all durations except background fade, the audio is dissolved from one source to the other.

AMPEX